

Term I Worksheet

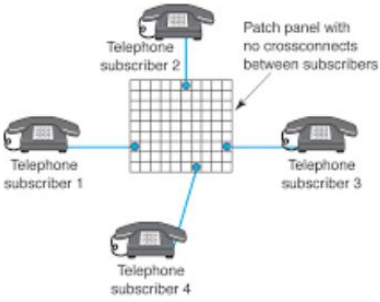
Class XII

<b>TERM 1 WORKSHEET</b> <b>Class 12th</b> <b>Subject- English</b> <b>Section A Reading</b>	
Q.1	Read the passage given below:
	<p>1. Few guessed that this quiet, parentless girl growing up in New York City would one day become the First Lady of the United States. Even fewer thought she would become an author and lecturer and a woman much admired and loved by people throughout the world.</p> <p>2. Born Anna Eleanor Roosevelt in 1884 to wealthy, but troubled parents who both died while she was young, Roosevelt was cared for by her grandmother and sent to school in England. In 1905, she married her distant cousin, Franklin Delano Roosevelt. She and her husband had six children. Although they were wealthy, her life was not easy and she suffered several personal tragedies. Her second son died when he was a baby. In 1921, her strong athletic husband was stricken with polio, which left him physically disabled for life.</p> <p>3. Eleanor Roosevelt was a remarkable woman who had great intelligence and tremendous strength of character. She never let things get her down. She nursed her husband back to good health and encouraged him to remain in politics. She then helped him to become Governor of New York, and in 1933, President of the United States.</p> <p>4. While her husband was President, she took a great interest in all the affairs of the country. She became her husband's legs and eyes; she visited prisons and hospitals; she went down into mines, up scaffoldings and into factories. Roosevelt was tireless and daring. During the depression she travelled all over the country bringing goodwill, reassurance and help to people without food and jobs. During World War II she visited American soldiers in camps all over the world. The United States had never known a First Lady like her.</p> <p>5. Roosevelt also kept in touch with the American people through a daily newspaper column called 'My Day'. She broadcast on the radio and delivered lectures, all first for a First Lady.</p>
	On the basis of your understanding of the above passage answer the following questions.
	<p>(a) How was Eleanor Roosevelt's personality in contrast to what she became?</p> <p>(b) Apart from being the First Lady what else did she have to her credit?</p> <p>(c) What challenges did she face in her personal life but remained unfazed?</p> <p>(d) Eleanor was a strong woman who helped her husband become the President of America. How?</p> <p>(e) What does the statement: 'she became her husband's legs and eyes' mean?</p> <p>(f) What was her special contribution during the depression?</p> <p>(g) How did she motivate soldiers during World War II?</p> <p>(h) What did she do for the first time for a First Lady?</p> <p>(i) What side of her personality is reflected in this passage?</p>
<b>Section B Creative Writing Skills</b>	
1.	The present-day youth are greatly stressed due to cut-throat competition and consumerist culture. Write an article in 150-200 words on the causes of the stress on the modern generation suggesting suitable solutions.
2.	You are Ruhi/Rahul, head girl/boy of ABC convent school. Your school is going to organize an inter-school singing competition. Write a notice for your school notice board inviting names of all the interested students.
3.	Ragging has raised its ugly head again. A recent incident at a prestigious college has shown that this evil has not yet come to an end. Write an article in 150-200 words on 'Ragging, an Evil'. You are Navtej/Navita.

4.	On 30th November your school is going to hold its annual sports day. You want Mr. Dhanraj Pillai, a noted hockey player to give away the prizes to the budding sportspersons of the school. Write a formal invitation in about 50 words requesting him to grace the occasion. You are Karun <sup>^</sup> /Karan, Sports Secretary, Sunrise Global School, Agra.
5.	<b>You are Dr. Shailesh Gupta, an eminent educationist. You have been invited to preside over an Inter Zonal Declamation Competition by Neha, the President of English Literary Club of Government Model Sr. Sec. School Sector-19, Chandigarh. Write a letter for refusal of the invitation.</b>
6.	<b>As a responsible citizen, you are concerned about the condition of Marine Lines. People have littered the entire place with plastic, masks and garbage. Write a letter to the editor of a leading daily to spread awareness on the matter.</b>
7.	You are Shaan/Shruti of C-29, Pragati Apartment, Rohini Delhi. You have received an invitation to attend the inauguration ceremony of his newly opened Departmental Store. Write a reply accepting the invitation.
<b>Section C Literature</b>	
Read the extract and answer the following questions.	
<p>“If we were not so single-minded  about keeping our lives moving,  and for once could do nothing,  perhaps a huge silence  might interrupt this sadness  of never understanding ourselves  and of threatening ourselves with death.</p>	
A	Whom does ‘we’ refer to in the above lines?
B	Why does the poet want us to ‘do nothing’ for once?
C	What is the ‘sadness’ that the poet refers to in the poem?
D	How can a huge silence do good to us?
<b>Answer the following questions in 40-50 words.</b>	
a	All we have to Fear is fear itself’. When did Douglas learn this lesson?
b	What were the contents of the package left by the peddler as Christmas gift for Edla Willmansson?
c	To the writer, the Antarctic experience very poignantly underlined the fact that everything in this creation is interlinked. Elaborate.
d.	How has man played havoc with the ecological health of the earth?
<b>Answer the following questions in 120-150 words.</b>	
1	People say that failures are the stepping stones. They are the best teachers. Discuss with reference to ‘Deep water’.
2	How does the story, ‘Lost Spring’ highlight the apathy of society and those in power to end the vicious cycle of poverty? Support your answer with textual evidence.
3	The story, ‘The Rattrap’ is both entertaining and philosophical. Do you agree with this statement? Why/Why not?
4	Dr. Sadao was compelled by his duty as a doctor to help the enemy soldier. What made Hana, his wife sympathies with him in the face of open defiance from the domestic staff?
5	‘A thing of beauty is a joy forever.’ This is what John Keats says in the poem. Do you think in the present times of acute stress and violence, proximity to beautiful things can lead man to everlasting happiness? Discuss.
6	How did Dr. Sadao rise above narrow prejudices of race and country to help a human being in need?
7	What was the General’s plan to get rid of the American prisoner? Was it executed? What traits of the General’s character are highlighted in the lesson ‘The Enemy’?

1	Construct a matrix $A = [a_{ij}]$ of order $2 \times 3$ where $a_{ij} = \begin{cases} i + j, & \text{if } (i + j) \text{ is odd} \\ 2i - j, & \text{if } (i + j) \text{ is even} \end{cases}$
2	Find the matrix A satisfying the matrix equation $\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
3	Find the inverse of the matrix $A = \begin{bmatrix} a & b \\ c & \frac{1+bc}{a} \end{bmatrix}$ and show that $aA^{-1} = (a^2 + bc + 1)I - aA$ .
4	If $A = \frac{1}{9} \begin{bmatrix} -8 & 1 & 4 \\ 4 & 4 & 7 \\ 1 & -8 & 4 \end{bmatrix}$ , prove that $A^{-1} = A^T$ .
5	If A is a non-singular square matrix such that $ A  = 10$ , find $ A^{-1} $ .
6	If A is a square matrix such that $A(\text{adj}A) = 5I$ , where I denotes the identity matrix of the same order. Then, find the value of $ A $ .
7	If $A = \begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$ and $A(\text{adj}A) = \begin{bmatrix} k & 0 \\ 0 & k \end{bmatrix}$ , then find the Value of k.
8	If A is a square matrix of order 3 such that $ A  = 3$ , then find the value of $ \text{adj}(\text{adj}A) $ .
9	Evaluate $\int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{dx}{1 + \sqrt{\cot x}}$
10	If $y = \sin x^{\sin x^{\sin x^{\dots \infty}}}$ , then prove that $\frac{dy}{dx} = \frac{y^2 \cot x}{1 - y \log \sin x}$
11	If the functions f(x), defined below is continuous at $x = 0$ , find the value of k: $f(x) = \begin{cases} \frac{1 - \cos 2x}{2x^2} & , x < 0 \\ k & , x = 0 \\ \frac{x}{ x } & , x > 0 \end{cases}$
12	If the function $f(x) = \frac{\sin 10x}{x}$ , $x \neq 0$ is continuous at $x = 0$ , find $f(0)$ .
13	Evaluate $\int_0^1 \frac{\log(1+x)}{1+x^2} dx$
14	If a, b, c are the roots of the equation $2x^3 - 4x^2 + 5x - 7 = 0$ , find the value of determinant $\begin{vmatrix} 1+a & 1 & 1 \\ 1 & 1+b & 1 \\ 1 & 1 & 1+c \end{vmatrix}$ , using simple expansion of determinant.
15	Evaluate $\int_2^4 \frac{x^2+x}{\sqrt{2x+1}} dx$
16	If $y = \sqrt{\frac{1-x}{1+x}}$ , prove that $(1-x^2) \frac{dy}{dx} + y = 0$
17	If $y = \log  \sqrt{x-1} - \sqrt{x+1} $ , show that $\frac{dy}{dx} = \frac{-1}{2\sqrt{x^2-1}}$

18	If $y = \sqrt{\frac{1+e^x}{1-e^x}}$ , show that $\frac{dy}{dx} = \frac{e^x}{(1-e^x)\sqrt{1-e^{2x}}}$ .
19	If $y = e^x \cos x$ , prove that $\frac{dy}{dx} = \sqrt{2}e^x \cdot \cos\left(x + \frac{\pi}{4}\right)$
20	If $y = e^x + e^{-x}$ , prove that $\frac{dy}{dx} = \sqrt{y^2 - 4}$
21	If $x = 2\cos\theta - \cos 2\theta$ and $y = 2\sin\theta - \sin 2\theta$ then prove that $\frac{dy}{dx} = \tan\left(\frac{3\theta}{2}\right)$
22	Show that the function $f$ defined by $f(x) = \begin{cases} 3x - 2, & \text{if } 0 < x \leq 1 \\ 2x^2 - x, & \text{if } 1 < x \leq 2 \\ 5x - 4, & \text{if } x > 2 \end{cases}$ is not differentiable at $x = 2$ .
23	Find $\frac{dy}{dx} (x^2 + y^2)^2 = xy$
24	If $\sin(xy) + \frac{y}{x} = x^2 - y^2$ , find $\frac{dy}{dx}$
25	$\int_0^3  x  +  x - 2  dx$
26	Separate the interval $[0, \pi/2]$ into sub-intervals in which $f(x) = \sin^4 x + \cos^4 x$ is increasing or decreasing.
27	Find the intervals in which $f(x) = (x + 2)e^{-x}$ is increasing or decreasing.
28	Show that of all the rectangles of given area, the square has the smallest perimeter.
29	An open box with a square base is to be made out of a given quantity of card board of area $c^2$ square units. Show that the maximum volume of the box is $\frac{c^3}{6\sqrt{3}}$ cubic units
30	A large window has the shape of a rectangle surmounted by an equilateral triangle. If the perimeter of the window is 12 metres find the dimensions of the rectangle that will produce the largest area of the window.
31	<p><math>P(x) = -5x^2 + 125x + 37500</math> is the total profit function of a company, where <math>x</math> is the production of the company.</p> <ol style="list-style-type: none"> <li>What will be the production when the profit is maximum? <ul style="list-style-type: none"> <li>a. 37500</li> <li>b. 12.5</li> <li>c. -12.5</li> <li>d. -37500</li> </ul> </li> <li>What will be the maximum profit? <ul style="list-style-type: none"> <li>a. Rs 38,28,125</li> <li>b. Rs 38281.25</li> <li>c. Rs 39,000</li> <li>d. None</li> </ul> </li> <li>Check in which interval the profit is strictly increasing. <ul style="list-style-type: none"> <li>a. <math>(12.5, \infty)</math></li> <li>b. for all real numbers</li> <li>c. for all positive real numbers</li> <li>d. <math>(0, 12.5)</math></li> </ul> </li> <li>When the production is 2 units what will be the profit of the company? <ul style="list-style-type: none"> <li>a. 37500</li> <li>b. 37,730</li> <li>c. 37,770</li> <li>d. None</li> </ul> </li> <li>What will be production of the company when the profit is Rs 38250? <ul style="list-style-type: none"> <li>a. 15</li> <li>b. 30</li> <li>c. 2</li> <li>d. data is not sufficient to find</li> </ul> </li> </ol>

32	<p>A telephone company in a town has 500 subscribers on its list and collects fixed charges of 300 per subscriber per year. The company proposes to increase the annual subscription and it is believed that for every increase of 1 one subscriber will discontinue the service. Based on above information answer the following questions:</p>  <p>1. If <math>x</math> be the annual subscription then the total revenue of the company after increment will be:</p> <ol style="list-style-type: none"> <li>1. <math>R(x) = -x^2 + 200x + 150000</math></li> <li>2. <math>R(x) = x^2 - 200x - 140000</math></li> <li>3. <math>R(x) = 200x^2 + x + 150000</math></li> <li>4. <math>R(x) = -x^2 + 100x + 100000</math></li> </ol> <p>2. To find maximum profit we put</p> <ol style="list-style-type: none"> <li>1. <math>R'(x) = 0</math></li> <li>2. <math>R'(x) &gt; 0</math></li> <li>3. <math>R'(x) &lt; 0</math></li> <li>4. <math>R''(x) = 0</math></li> </ol> <p>3. How much fee the company should increase to have maximum profit?</p> <ol style="list-style-type: none"> <li>1. Rs. 150</li> <li>2. Rs. 100</li> <li>3. Rs. 200</li> <li>4. Rs. 250</li> </ol> <p>4. Find the maximum profit that the company can make if the profit function is given by <math>P(x) = 41 + 24x - 18x^2</math>.</p> <ol style="list-style-type: none"> <li>1. 25</li> <li>2. 44</li> <li>3. 45</li> <li>4. 49</li> </ol> <p>5. Find both the maximum and minimum values respectively of <math>3x^4 - 8x^3 + 48x + 1</math> on the interval <math>[1, 4]</math>.</p> <ol style="list-style-type: none"> <li>1. -63, 257</li> <li>2. 258, -63</li> <li>3. 257, -63</li> <li>4. -63, -257</li> </ol>
33	The number of possible matrices of order $3 \times 3$ with each entry 5 or 7 are a. 35                      b. 81                      c. 512                      d. 18
34	If the value of a third order determinant is 3 then the value of the square of the determinant formed by the cofactors will be a. 9                      b. 81                      c. 27                      d. None of these
35	If $\int f(x)dx = \frac{2^x}{\log_e 2} + C$ , then $f(x)$ is a. $2^x$ b. $\frac{2^x}{\log_e 2}$ c. $2^x \log_e 2$ d. $2^{x-1}$
36	The value of $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \sin^3 x dx$ is a. $\frac{\pi}{2}$ b. $-\frac{\pi}{2}$ c. 0                      d. $\frac{\pi^3}{8}$
37	If $A = \begin{bmatrix} 2 & -1 & 0 \\ 1 & 3 & 6 \end{bmatrix}$ , $B = \begin{bmatrix} 1 & 2 \\ -1 & 2 \\ 3 & 0 \end{bmatrix}$ and $BA = [B_{ij}]$ then value of $b_{32} + b_{11}$ is a. 1                      b. 16                      c. 12                      d. 7
38	$\int \frac{1}{x^2+1} dx$ is equal to a. $\log x^2 + 1  + C$ b. $\frac{\log x^2+1 }{2x} + C$ c. $\frac{1}{(x^2+1)^2} + C$ d. $\tan^{-1} x + C$
39	Assertion: $(\sin^{-1} x)^2 \neq \sin^{-2} x$ Reason: $\sin^{-1} x$ represents inverse inverse of sin function, we can't use exponent laws.
40	Assertion: The principal value of $\cos^{-1}[\cos(\frac{11\pi}{6})]$ is $\frac{2\pi}{3}$ . Reasoning: The domain of $\cos^{-1} 2x$ is $(-\frac{1}{2}, \frac{1}{2})$

### Physics

Assertion and reason

1	Assertion: The dimensional formula for product of resistance and conductance is same as for dielectric constant. Reason: Both have dimensions of time constant.	
2	Assertion: Electrons move from a region of higher potential to a region of lower potential. Reason: An electron has less potential energy at point where potential is higher.	
3	Assertion: A wire carrying an electric current has no electric field around it. Reason: Rate of flow of electrons in one direction is equal the rate of flow of protons in opposite direction .	
4	Assertion: Though large number of free electrons are present in the metal. Yet there is no current in the absence of electric field. Reason: In the absence of electric field electrons move randomly in all directions.	
5	Assertion: The value of temperature coefficient of resistance is positive for metals. Reason: The temperature coefficient of resistance for insulator is also positive.	
6	Assertion: The conductivity of an electrolyte is very low as compared to a metal at room temperature Reason: The number density of free ions in electrolyte is much smaller as compared to number density of free electrons in metals. Further, ions drift much more slowly, being heavier	
7	Assertion: An electrical bulb starts glowing instantly as it is switched on. Reason: Drift speed of electrons in a metallic wire is very large	
8	Assertion: A current flows in a conductor only when there is an electric field within the conductor Reason: The drift velocity of electrons in presence of electric field decreases.	
9	Assertion. Magnetic field cannot change kinetic energy of a moving charge. Reason. Magnetic field cannot change velocity vector.	
10	8. Assertion: A proton and an electron, with same momenta, enter a magnetic field in a direction at right angles to the lines of the force. The radius of the paths followed by them will be same. Reason: Electron has less mass than the proton.	
11	Assertion: To increase the range of an ammeter, we must connect a suitable high resistance in series with it. Reason: The ammeter with increased range should have high resistance.	
12	Assertion: On increasing the current sensitivity of a galvanometer by increasing the number of turns, may not necessarily increase its voltage sensitivity. Reason: The resistance of the coil of the galvanometer increases on increasing the number of turns.	
13	Assertion. The magnetic poles of earth do not coincide with the geographic poles. Reason. The discrepancy between the orientation of a compass and true north-south direction is known as magnetic declination.	
14	2. Assertion: Magnetic susceptibility is a pure number. Reason: The value of magnetic susceptibility for vacuum is one.	
15	3. Assertion. Susceptibility is defined as the ratio of intensity of magnetisation I to magnetic intensity H. Reason. Greater the value of susceptibility, smaller the value of intensity of magnetisation I.	
16	Assertion. The magnetic moment ( $\mu$ ) of an electron revolving around the nucleus decreases with increasing principal quantum number ( $n$ ). Reason. Magnetic moment of the revolving electron, $\mu \propto \frac{1}{n}$ .	

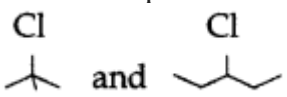
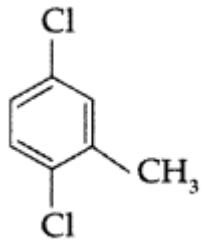
17	Assertion. Above Curie temperature, a ferro- magnetic material becomes paramagnetic. Reason. When a magnetic material is heated to very high temperature, it loses its magnetic properties.	
18	Assertion. In water, value of magnetic field decreases. Reason. Water is a diamagnetic substance.	
19	Assertion. When radius of a circular loop carrying Current is doubled, its magnetic moment becomes four times. Reason. Magnetic moment depends on area of the loop.	
20	Assertion: Faraday's laws are consequence of the conservation of energy. Reason : In a purely resistive a.c. circuit , the current lags behind the emf in phase.	
21	<b>Whenever the magnetic flux linked with an electric circuit changes, an emf is induced in the circuit. This is called</b> (a) electromagnetic induction (b) lenz's law (c) hysteresis loss (d) kirchhoff's laws	
22	<b>In electromagnetic induction, the induced charge is independent of</b> (a) change of flux (b) time. (c) resistance of the coil (d) None of these	
23	<b>An induced e.m.f. is produced when a magnet is plunged into a coil. The strength of the induced e.m.f. is independent of</b> (a) the strength of the magnet (b) number of turns of coil (c) the resistivity of the wire of the coil (d) speed with which the magnet is moved	
24	<b>A moving conductor coil produces an induced e.m.f. This is</b> in accordance with (a) Lenz's law (b) Faraday's law (c) Coulomb's law (d) Ampere's law	
25	<b>A coil of insulated wire is connected to a battery. If it is taken to galvanometer, its pointer is deflected, because</b> (a) the induced current is produced (b) the coil acts like a magnet (c) the number of turns in the coil of the galvanometer are changed (d) None of these	
26	<b>The polarity of induced emf is given by</b> (a) Ampere's circuital law (b) Biot-Savart law (c) Lenz's law (d) Fleming's right hand rule	
27	<b>he self inductance of a coil is a measure of</b> (a) electrical inertia (b) electrical friction (c) induced e.m.f. (d) induced current	

28	<p><b>The coils in resistance boxes are made from doubled insulated wire to nullify the effect of</b></p> <p>(a) heating  (b) magnetism  (c) pressure  (d) self induced e.m.f.</p>	
29	<p>Units for magnetic flux density</p> <p>(a) Wb / m<sup>2</sup> (b) Wb / A.m (c) A / m (d) Tesla / m</p>	
	<p>Magnetic permeability has units as</p> <p>(a) Wb / m<sup>2</sup> (b) Wb / A.m (c) A / m (d) Tesla / m</p>	
30	<p>Example for dia-magnetic materials</p> <p>(a) super conductors (b) alkali metals (c) transition metals (d) Ferrites</p>	
31	<p>Example for anti-ferro-magnetic materials</p> <p>(a) salts of transition elements (b) rare earth elements (c) transition metals (d) Ferrites</p>	
32	<p>Example for soft magnet</p> <p>(a) 45 Permalloy (b) CrO<sub>2</sub> (c) Fe-Pd (d) Alnico</p>	
33	<p>Example for hard magnet</p> <p>(a) 45 Permalloy (b) CrO<sub>2</sub> (c) Fe-Pd (d) Alnico</p>	
34	<p>The current which is assumed to be flowing in a circuit from positive terminal to negative, is called</p> <p>(a) direct current  (b) pulsating current  (c) conventional current  (d) alternating current</p>	
35	<p>When no current is passed through a conductor,</p> <p>(a) the free electrons do not move  (b) the average speed of a free electron over a large period of time is not zero  (c) the average velocity of a free electron over a large period of time is zero  (d) the average of the velocities of all the free electrons at an instant is non zero</p>	
36	<p>A current passes through a wire of nonuniform cross-section. Which of the following quantities are independent of the cross-section?</p> <p>(a) The charge crossing  (b) Drift velocity  (c) Current density  (d) Free-electron density</p>	
37	<p>In the absence of an electric field, the mean velocity of free electrons in a conductor at absolute temperature (T) is</p> <p>(a) zero  (b) independent of T  (c) proportional to T  (d) proportional to T<sup>2</sup></p>	
38	<p>The relaxation time in conductors</p> <p>(a) increases with the increases of temperature  (b) decreases with the increases of temperature  (c) it does not depends on temperature  (d) all of sudden changes at 400 K</p>	
39	<p>The example of non-ohmic resistance is</p> <p>(a) diode  (b) copper wire  (c) filament lamp</p>	



	(d) <u>carbon resistor</u>	
40	Constantan wire is used for making standard resistance, because it has (a) high melting point (b) low specific resistance (c) high specific resistance (d) negligible temperature coefficient of resistance	

	<b>WORKSHEET CLASS XII</b>	<b>SUBJECT :CHEMISTRY TERM - I</b>	
	<b>SECTION A</b>		
1.	An electrochemical cell generally consists of a cathode and an anode. Which of the following statements is correct with respect to the cathode? a) Oxidation occurs at the cathode b) Electrons move into the cathode c) Usually denoted by a negative sign d) Is usually made up of insulating material		
2.	Which of the following is not a generally used electrolyte in the salt bridges used to connect the two half-cells of an electrochemical cell? a) NaCl   b) KNO <sub>3</sub> c) KCl   d) ZnSO <sub>4</sub>		
3.	The IUPAC name of complex ion [Fe(CN) <sub>6</sub> ] <sup>3-</sup> is (a) Hexacyanidoiron(III)ion (b) Hexacyanato ferrate (III)ion (c) Hexacyanidoferrate (III)ion (d) Tricyanoiron(III)ion		
4.	Which of the following aqueous solutions should have the highest boiling point? (a) 1.0 M Glucose      (b) 1.0 M Na <sub>2</sub> SO <sub>4</sub> (c) 1.0 M KCl            (d) 1.0 M Urea		
5.	Which of the following is a hexadentate ligand? (a) EDTA <sup>4-</sup> (b) (COO) <sub>2</sub> <sup>2-</sup> (c) en      (d) NH <sub>3</sub>		
6.	Mohr's salt is: (a) Fe <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> ·(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> ·6H <sub>2</sub> O      (b) FeSO <sub>4</sub> ·(NH <sub>4</sub> ) <sub>2</sub> ·SO <sub>4</sub> ·6H <sub>2</sub> O (c) MgSO <sub>4</sub> ·7H <sub>2</sub> O      (d) FeSO <sub>4</sub> ·7H <sub>2</sub> O		
7.	According to Werner's theory of coordination compounds (a) Primary valence is ionisable (b) Secondary valence is ionisable (c) Primary and secondary valencies are ionisable (d) Neither primary nor secondary valence is ionisable		
8.	Which one of the following is an outer orbital complex and exhibits paramagnetic behaviour : (a) [Cr(NH <sub>3</sub> ) <sub>6</sub> ] <sup>3+</sup> (b) [Co(NH <sub>3</sub> ) <sub>6</sub> ] <sup>3+</sup> (c) [Ni(NH <sub>3</sub> ) <sub>6</sub> ] <sup>2+</sup> (d) [Zn(NH <sub>3</sub> ) <sub>6</sub> ] <sup>2+</sup>		
9.	The oxidation state of nickel in [Ni(CO <sub>4</sub> )] is		

	(a) 0      (b) 1      (c) 2      (d) 3	
10.	The ligand (NH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH <sub>2</sub> ) is (a) bidentate (b) tridentate (c) tetradentate (d) pentadentate	
11.	Arrange the following in increasing order of boiling point: (i) CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> Br (ii) (CH <sub>3</sub> ) <sub>3</sub> Br (iii) (CH <sub>3</sub> ) <sub>2</sub> C.Br	
12.	Which compound in the following pair undergoes faster S <sub>N</sub> 1 reaction. 	
13.	Write the IUPAC name of the following compound : 	
14.	Write the structure of 1-Bromo-4-chlorobut-2-ene.	
15.	An antifreeze solution is prepared by dissolving 31 g of ethylene glycol (Molar mass = 62 g mol <sup>-1</sup> ) in 600 g of water. Calculate the freezing point of the solution. (K <sub>f</sub> for water = 1.86 K kg mol <sup>-1</sup> )	
16.	(a) A solution contains 5.85 g NaCl (Molar mass = 58.5 g mol <sup>-1</sup> ) per litre of solution. It has an osmotic pressure of 4.75 atm at 27°C. Calculate the degree of dissociation of NaCl in this solution. (Given : R = 0.082 L atm K <sup>-1</sup> mol <sup>-1</sup> ) (b) State Henry's law. Why is air diluted with helium in the tanks used by scuba divers?	
<b>SECTION B</b>		
17.	Provide the name or chemical formula for the following complex compounds or ions. a. tetrahydrozincate (II) ion b. [Co(OH <sub>2</sub> ) <sub>4</sub> Cl <sub>2</sub> ]Cl c. [Cu(NH <sub>3</sub> ) <sub>4</sub> ] <sup>+2</sup> d. potassium hexachlorostannate (IV) e. tetraamminedichloroplatinum (IV) hexachloroplatinate (IV)  (a) Out of t-butyl alcohol and n-butanol, which one will undergo acid catalyzed dehydration faster and why? (b) Carry out the following conversions : (i) Phenol to Salicylaldehyde (ii) t-butylchloride to t-butyl ethyl ether (iii) Propene to Propanol OR	
18.	(a) Give the mechanism for the formation of ethanol from ethene. (b) Predict the reagent for carrying out the following conversions : (i) Phenol to benzoquinone (ii) Anisole to p-bromoanisole (iii) Phenol to 2,4,6-tribromophenol	

<p>19.</p> <p>20.</p> <p>21.</p> <p>22.</p>	<p>Give reasons for the following : (a) Bond angle in alcohol is slightly less than the tetrahedral angle. (b) C – OH bond length in CH<sub>3</sub>OH is slightly more than the C – OH bond length in phenol.</p> <p>a)What is meant by ‘limiting molar conductivity’? b)Determine the values of equilibrium constant (<math>K_c</math>) and <math>\Delta G^\circ</math> for the following reaction :  <math display="block">\text{Ni(s)} + 2\text{Ag}^+(\text{aq}) \rightarrow \text{Ni}^{2+}(\text{aq}) + 2\text{Ag(s)},</math> <math display="block">E^\circ = 1.05 \text{ V}</math> <math display="block">(1\text{F} = 96500 \text{ C mol}^{-1})</math></p> <p>Two half-reactions of an electrochemical cell are given below :  <math display="block">\text{MnO}_4^- (\text{aq}) + 8\text{H}^+ (\text{aq}) + 5\text{e}^- \rightarrow \text{Mn}^{2+} (\text{aq}) + 4\text{H}_2\text{O (l)}, E^\circ = 1.51 \text{ V}</math> <math display="block">\text{Sn}^{2+} (\text{aq}) \rightarrow \text{Sn}^{4+} (\text{aq}) + 2\text{e}^-, E^\circ = + 0.15 \text{ V}.</math>           Construct the redox equation from the standard potential of the cell and predict if the reaction is reactant favoured or product favoured.</p> <p>Write formulas for the following.</p> <ol style="list-style-type: none"> <li>hexaamminechromium(III) nitrate</li> <li>sodium tetrahydroxochromate(III)</li> <li>hexaammineruthenium(III) tetrachloronickelate(II)</li> <li>tetraamminecopper(II) pentacyanohydroxoferrate(III)</li> </ol>	
<b>SECTION C</b>		
<p>23.</p>	<p>Read the given passage and answer the questions that follow:</p> <p>According to Valence Bond Theory theory, the metal atom or ion under the influence of ligands can use its (n-1)d, ns, np or ns, np, nd orbitals for hybridisation to yield a set of equivalent orbitals of definite geometry such as octahedral, tetrahedral, square planar and so on. These hybridised orbitals are allowed to overlap with ligand orbitals that can donate electron pairs for bonding. It is usually possible to predict the geometry of a complex from the knowledge of its magnetic behaviour on the basis of the valence bond theory.</p> <ol style="list-style-type: none"> <li>Is [Co(NH<sub>3</sub>)<sub>6</sub>]<sup>3+</sup> an inner orbital or outer orbital complex?</li> <li>Identify the magnetic behaviour of the complex [Ni(CO)<sub>4</sub>]</li> <li>Calculate the spin only magnetic moment of [MnB<sub>4</sub>]<sup>2-</sup></li> </ol> <p>Assertion: [Ni(CO)<sub>4</sub>] has tetrahedral geometry.            Reason: IUPAC name of [Ni(CO)<sub>4</sub>] is Tetracarbonylnickel(0)</p> <ol style="list-style-type: none"> <li>Both assertion and reason are correct statements, and reason is the correct explanation of the assertion.</li> <li>Both assertion and reason are correct statements, but reason is not the correct explanation of the assertion.</li> <li>Assertion is correct, but reason is wrong statement.</li> <li>Assertion is wrong, but reason is correct statement</li> </ol>	
<b>SECTION D</b>		

24.	Express the relation among the cell constant, the resistance of the solution in the cell and the conductivity of the solution. How is the conductivity of a solution related to its molar conductivity?
25.	Express the relation between conductivity and molar conductivity of a solution held in a cell.
26.	What is the effect of catalyst on: (i) Gibbs energy ( $\Delta G$ ) and (ii) activation energy of a reaction?
27.	Two half cell reactions of an electrochemical cell are given below : $\text{MnO}_4^-(\text{aq}) + 8\text{H}^+(\text{aq}) + 5\text{e}^- \rightarrow \text{Mn}^{2+}(\text{aq}) + 4\text{H}_2\text{O}(\text{l}), E^\circ = + 1.51 \text{ V}$ $\text{Sn}^{2+}(\text{aq}) \rightarrow 4 \text{Sn}^{4+}(\text{aq}) + 2\text{e}^-, E^\circ = + 0.15 \text{ V}$ Construct the redox equation from the two half cell reactions and predict if this reaction favours formation of reactants or product shown in the equation.
28.	Express the relation among the cell constant, the resistance of the solution in the cell and the conductivity of the solution. How is the conductivity of a solution related to its molar conductivity?
29.	Given that the standard electrode potentials ( $E^\circ$ ) of metals are : $\text{K}^+/\text{K} = -2.93 \text{ V}$ , $\text{Ag}^+/\text{Ag} = 0.80 \text{ V}$ , $\text{Cu}^{2+}/\text{Cu} = 0.34 \text{ V}$ , $\text{Mg}^{2+}/\text{Mg} = -2.37 \text{ V}$ , $\text{Cr}^{3+}/\text{Cr} = -0.74 \text{ V}$ , $\text{Fe}^{2+}/\text{Fe} = -0.44 \text{ V}$ . Arrange these metals in increasing order of their reducing power.
31.	Two half-reactions of an electrochemical cell are given below : $\text{MnO}_4^-(\text{aq}) + 8\text{H}^+(\text{aq}) + 5\text{e}^- \rightarrow \text{Mn}^{2+}(\text{aq}) + 4\text{H}_2\text{O}(\text{l}), E^\circ = 1.51 \text{ V}$ $\text{Sn}^{2+}(\text{aq}) \rightarrow \text{Sn}^{4+}(\text{aq}) + 2\text{e}^-, E^\circ = + 0.15 \text{ V}$ .
32.	The molar conductivity of a 1.5 M solution of an electrolyte is found to be 138.9 S cm <sup>2</sup> mol <sup>-1</sup> . Calculate the conductivity of this solution.  A zinc rod is dipped in 0.1 M solution of ZnSO <sub>4</sub> . The salt is 95% dissociated at this dilution at 298 K. Calculate the electrode potential. [ $E^\circ_{\text{Zn}^{2+}/\text{Zn}} = - 0.76 \text{ V}$ ]
33.	Write the electronic configuration of d5 on the basis of crystal field theory when: (i) $\Delta O < P$ (ii) $\Delta O > P$  (b) Write the preparation of phenol from cumene. OR How can you convert the following : (i) Sodium phenoxide to o-hydroxybenzoic acid (ii) Acetone to propene (iii) Phenol to chlorobenzene
34.	a) Account for the following : (i) o-nitrophenol is more steam volatile than p-nitrophenol. (ii) t-butyl chloride on heating with sodium methoxide gives 2-methylpropene instead of t-butylmethylether. (b) Write the reaction involved in the following : (i) Reimer-Tiemann reaction (ii)

	Friedal-Crafts Alkylaton of Phenol (c) Give simple chemical test to distinguish between Ethanol and Phenol.	
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Worksheet for term1(2024-2025)  
class12  
biology

1	AIDS is caused by HIV. Among the following, which one is not a mode of transmission of HIV? (a) Transfusion of contaminated blood. (b) Sharing the infected needles. (c) Shaking hands with infected persons. (d) Sexual contact with infected persons.	
2	The substance produced by a cell in viral infection that can protect other cells from further infection is (a) serotonin (b) colostrums (c) interferon (d) histamine.	
3	Which of the following is not a lymphoid tissue ? (a) Spleen (b) Tonsils (c) Pancreas (d) Thymus	
4	Which of the following glands is large sized at birth but reduces in size with ageing ? (a) Pineal (b) Pituitary (c) Thymus (d) Thyroid	
5	Haemozoin is a (a) precursor of haemoglobin (b) toxin released from Streptococcus infected cells (c) toxin released from Plasmodium infected cells (d) toxin released from Haemophilus infected cells.	
6	The theory of spontaneous generation stated that (a) life arose from living forms only (b) life can arise from both living and non-living (c) life can arise from non-living things only (d) life arises spontaneously, neither from living nor from the non-living.	
7	Animal husbandry and plant breeding programmes are the examples of (a) reverse evolution (b) artificial selection (c) mutation (d) natural selection.	
8	Palaentological evidences for evolutaion refer to the (a) development of embryo (b) homologous organs (c) fossils (d) analogous organs.	
9	Analogous organs arise due to (a) divergent evolution (b) artificial selection (c) genetic drift (d) convergent evolution.	
1	$(p+q)^2 = p^2 + 2pq + q^2 = 1$ represents an equation used in (a) population genetics (b) Mendilian genetics (c) biometircs (d) molecular genetics.	
1	Variations during mutations of meiotic recombinations are (a) random and directionless (b) random and directional (c) random and small (d) random small and directional	
1	Who proposed that the first form of the could have come from pre-existing non-living	

	organic molecules ? (a) S.L. Miller (b) Oparin and Haldane (c) Charles Darwin (d) Alfred Wallace	
1	According to Oparin, which one of the following was not present in the primitive atmosphere of the earth ? (a) Methane (b) Oxygen (c) Hydrogen (d) Water vapour	
1	The net electric charge on DNA and histones is (a) both positive (b) both negative (c) negative and positive, respectively (d) zero.	
1	The first genetic material could be (a) protein (b) carbohydrates (c) DNA (d) RNA.	
1	Which of the following steps in transcription is catalysed by RNA polymerase ? (a) Initiation (b) Elongation (c) Termination (d) All of the above	
1	In some viruses, DNA is synthesised by using RNA as template. Such a DNA is called (a) A – DNA (b) B – DNA (c) cDNA (d) rDNA.	
1	If the sequence of nitrogen bases of the coding strand of DNA in a transcription unit is: 5' – ATGAATG – 3', the sequence of bases in its RNA transcript would be (a) 5' – AUG A AUG – 3' (b) 5' – UACUU AC – 3' (c) 5' – CAUUCAU – 3' (d) 5' – GUAAGUA – 3'.	
1	The amino acid attaches to the tRNA at its (a) 5'- end (b) 3' – end (c) anticodon site (d) DHUloop.	
2	Find out the wrong statement about heterochromatin, (a) It is densely packed (b) It stains dark. (c) It is transcriptionally active.(d) It is late replicating.	
2	The three codons which result in the termination of polypeptide chain synthesis are (a) UAA, UAG, GUA (b) UAA, UAG, UGA (c) UAA, UGA, UUA (d) UGU,UAG,UGA	
2	A cross between two tall plants resulted in offspring having few dwarf plants. What would be the genotypes of both the parents ? (a) TT and Tt (b) Tt and Tt (c) TT and TT (d) Tt and It	
2	Which of the following will not result in variations among siblings ? (a) Independent assortment of genes (b) Crossing over	

	(c) Linkage	(d) Mutation	
2	Which of the following will not result in variations among siblings ? (a) Independent assortment of genes      (b) Crossing over (c) Linkage      (d) Mutation		
2	Genes which code for a pair of contrasting traits are known as (a) dominant genes (b) alleles (c) linked genes (d) none of these		
2	The characters which appear in the first filial generation are called (a) recessive characters (b) dominant characters (c) holandric characters (d) lethal characters		
2	In a monohybrid cross between two heterozygous individuals, percentage of pure homozygous individuals obtained in F <sub>1</sub> generation will be (a) 25 % (b) 50 % (c) 75 % (d) 100 %		
2	What is the probability of production of dwarf offsprings in a cross between two heterozygous tall pea plants ? (a) Zero (b) 50 % (c) 25 % (d) 100 %		
2	Which of the following crosses will give tall and dwarf pea plants in same proportions ? (a) TT × tt (b) Tt × tt (c) TT × Tt (d) tt × tt		
3	A couple has six daughters. What is the possibility of their having a girl next time ? (a) 10 % (b) 50 % (c) 90 % (d) 100 %		

**WORKSHEET**  
**Class-XII**  
**Sub. Physical Education**  
**Term I 2024- 25**

Q-1	What is Planning
Q-2	Describe the types of Tournament in detail
Q-3	Discuss the Intramural and Extramural activity
Q-4	Draw a knockout Fixture for 13 teams

Q-5	Explain the deformities related with legs
Q-6	Describe Hollow back and Hunch back deformities
Q-7	Write a short note on women's participation in sports
Q-8	Highlight the Female Athlete Triad
Q.9	Discuss the advantages of sports participation for Women
Q.10	What do you mean by Obesity
Q.11	Describe Back pain
Q.12	Explain Asthma and its symptom
Q.13	Highlight the Diabetes and Hypertension
Q.14	Describe the concept of Disability
Q.15	Write a short note on Paralympics
Q.16	Describe Special Olympic
Q.17	Discuss Deaflympics in detail
Q.18	Highlight the importance of Physical activity for CWSN
Q.19	Define Nutrition
Q.20	Define Balanced diet
Q.21	Explain Energy food, Bodybuilding Food and Defensive Food
Q.22	What are the Macro and Micro Nutrients
Q.23	Mention the factors Which can affect your Diet
Q.24	What is the role of water in our body
Q.25	Explain the condition when a person is not able a particular food
Q.26	Mention the role of diet in Sports Performance
Q.27	Mention Harvard Step test in detail
Q.28	Discuss the Rikli and Jones Test in detail
Q.29	Highlight Johnson and Metheny Test
Q.30	Draw a League Fixture of 7 teams by using Staircase Method

**WORKSHEET**

**Class-XII**

**Sub. MUSIC**

**Term I 2024- 25**

1	What is kan swar ?
2	Describe sangeet parijat Granth.
3	describe jhap taal & write its dugun , tigung & chougun.
4	Write definition of gram murchna , aalap, taan , alankar, meend, kahtka
5	Describe raag bageshwari & write the notation of vilambit khyal & drut khyaal.
6	write biography of faiyaz khan , krishn rao Shankar pandit
7	what is time theory of raag
8	Describe sungeet ratnakar granth.



